

**Remarks/Arguments:**

By this Amendment, Applicants have amended claims 29 and 39. Claims 29, 31-39, and 41-46 are pending.

**FAILURE TO ACKNOWLEDGE THE SECOND PRELIMINARY AMENDMENT**

Applicants properly filed a Second Preliminary Amendment on March 5, 2004 (copy of which is attached along with the Return Receipt Postcard). The Examiner, however, has not acknowledged consideration of the Second Preliminary Amendment. Applicants request that the Examiner acknowledge receipt and review of the Second Preliminary Amendment.

**CLAIM REJECTIONS UNDER SECTION 103**

Claims 29, 31-39, and 41-46 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Koganezawa in view of Stefansky. By this Amendment, Applicants respectfully traverse the § 103(a) rejection.

Claims 29 and 39 are independent claims. Claims 31-38 are dependent on claim 29, and claims 41-46 are dependent on claim 39.

Turning first to independent claim 29, it is directed to a head support mechanism and includes the following elements:

- a slider having a head attached thereto, for recording data to and/or reproducing data from a disk,
- a slider holding plate for holding the slider,
- a pair of substrates each having a piezoelectric element attached thereto,
- elastic hinges for connecting the slider holding plate and the pair of substrates, and

- **a dimple for supporting the slider holding plate such that the slider holding plate is rotated in a pitch direction, a roll direction, and a yaw direction,**
- **wherein the slider is rotated in the yaw direction on the dimple as a center of rotation by contraction and/or expansion of at least one piezoelectric elements,** and wherein the position of the dimple either coincides with the center of gravity of a portion including the slider holding plate and the slider which is rotatable around the dimple as a rotating axis, or is located between the center of gravity of the portion and the head.

Applicants contend that the head support mechanism defined by claim 29 is patentably distinguished from the Koganezawa and Stefansky Patents at least based on the requirements of a dimple for supporting the slider holding plate such that the slider holding plate is rotated in a pitch direction, a roll direction, and a yaw direction, and that the slider is rotated in the yaw direction on the dimple as a center of rotation by contraction and/or expansion of at least one of the piezoelectric elements. Simply put, these features are lacking in the references of record, which thereby patentably distinguishes claim 29 from the references of record.

The Koganezawa Patent in general relates to an actuator including a shear-type piezoelectric element of predetermined thickness and an opposed electrode formed on two electrodes in space relationship on a base member. The opposed electrode is displaced in accordance with the direction of polarization of the shear-type piezoelectric element upon applying a voltage between the two electrodes.

The Examiner admits that the Koganezawa Patent does not disclose a dimple on a tip of the load beam for supporting the slider holding plate so that the holding plate is rotated in a pitch, roll, and yaw direction. (See the Office Action at page 3, last paragraph). But the Examiner contends that the Stefansky Patent discloses a load beam accompanying a slider holding plate 42 and a dimple 60 on the load beam for supporting the slider so that the slider holding plate is rotated in a pitch, roll, and yaw direction. The Examiner further contends that the slider is rotated around the dimple in the yaw direction by the contraction and/or expansion of at least one of the piezoelectric elements. Applicants respectfully disagree.

Referring to Figure 2 of the Stefansky Patent, the load point 60 is shown as a circle on the load beam 18. Thus from Figure 2 alone, one skilled in the art cannot determine or infer that the load beam 60 is a "dimple," as recited in Applicants' claim 29. In addition, the Stefansky Patent discloses at column 3, lines 43-45, an actuation system wherein a load beam 18 applies a load to the slider 24 through a lever plate 42 and tongue 27 of flexure 22 at load point 60. This operation is to ensure that the head 40 is maintained in close proximity with the surface of the disk 30. From this statement it is apparent that a load or force is applied to the slider 24 through the lever plate 42 at the load point 60. But the Stefansky Patent does not disclose that the load point 60 is a dimple for supporting a slider holding plate such that the slider holding plate is rotated in a pitch direction, a roll direction, and a yaw direction as set forth in Applicants' claim 29.

In addition, the Stefansky Patent discloses that in operation, a linear force on tab 46 in a direction of arrows 62 forces hinges 52 to distort and bend, because of the connection between lever plate 42 and load beam 18 at aperture 56. The distortion of hinges 52 **causes lever plate 42 and flexure 22 to rotate on the axis of aperture 56**, resulting in accurate displacement of transducing head 40 at the trailing edge of the slider 24 (See column 3, lines 47-65 of the Stefansky Patent).

Thus, the Stefansky Patent discloses that the slider 24 and lever plate 42 (the alleged slider holding plate) rotate on the axis of the aperture 54. Therefore, the slider 24 is not rotated around an axis of the load point 60 in the yaw direction as suggested by the Examiner. The Stefansky Patent does not teach or suggest that a slider, which is rotatable around a "dimple" as a rotating axis, is rotated around the dimple in the yaw direction by contraction and/or expansion of at least one of the piezoelectric elements, as recited in claim 29. Accordingly, the Stefansky Patent is lacking in the above noted features of Applicants' independent claim 29, as well as the claims dependent thereon.

With respect to the remaining embodiments disclosed in the Stefansky Patent at Figures 6, 8, 10, and 12, these embodiments rotate on an axis at a hinge 80, which is not located at the load point 60 (See column 4, lines 51-53; column 6, lines 2-4; column 7, lines 41-43 in association with Figures 6, 8, 10, and 12). These embodiments therefore do not disclose a pair of substrates having a piezoelectric element attached thereto, such that the slider, which is rotatable around the dimple as a rotating axis, is rotated in the yaw direction on

the dimple as a center of rotation by the contraction and/or expansion of at least piezoelectric element, as recited in claim 29. In addition, these embodiments do not provide any further details with respect to the load point as discussed above.

Based on the foregoing discussion, Applicants contend that the Koganezawa Patent in view of the Stefansky Patent does not disclose the above noted features of claim 29. Therefore claim 29 and the claims dependent thereon are patentably distinguished from the references of record.

Independent claim 39 is also directed to a head support mechanism and includes substantially the same features as discussed above with respect to claim 29. Thus claim 39 and the claims dependent thereon are patentably distinguished from the references of record. Applicants therefore request that the Section 103 Rejection be withdrawn.

Applicants encourage the Examiner to contact Applicants' counsel, Daniel N. Calder, if the Examiner believes that a further interview will be helpful in advancing prosecution and allowance of the above identified application.

In view of the foregoing remarks and amendments, Applicants respectfully submit that claims 29, 31-39, and 41-46 are in condition for allowance. Reconsideration and allowance of all pending claims are respectfully requested.

Respectfully submitted,



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Attachments: Copy of Second Preliminary Amendment;  
Copy of Return Receipt Postcard

Dated: May 19, 2005

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Application No. 10/705,325  
Amendment Dated May 19, 2005  
Reply to Office Action of February 24, 2005

YAO-4337US4

The Commissioner for Patents is hereby authorized to charge payment to Deposit Account No. **18-0350** of any fees associated with this communication.

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail, with sufficient postage, in an envelope addressed to: Mail Stop Amendment, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on: **May 19, 2005**

  
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Lorraine C. Fox

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